

Stabilizing Wing - 7 gauge H.R.P.O. ASTM A 569

Plate - ASTM A572 grade 50

D - 754 - 24

" Dia. bolt

— Sign

-Nylon washei

Horizontal

see note 1

Sign -

suppor

stringer

∿" Bolt

with washer

√ 3/16" x 1"

Post

& lock washer

& lock washer

threaded

3/8" Dia. bolt with

Post

Horizontal

see note 1

stringer

STRINGER MOUNTING

washer and lock washer (bolt length varies with size of posts)

Nylon\_

washer

Top View

See note 3

-3<sub>/8</sub>" Dia. bolt

& lock washer

washer, washer

Sian support

5/16" Dia. bolt with

washer & lock washer 18 N.C. threaded

h o

with nylon

3/8" Bolt with washer

Top View

Sign-

metal fits stringer and STREET NAME SIGNS

BACK TO BACK

MOUNTING

attachment bracket\_

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AND ONE WAY SIGNS

SINGLE POST ASSEMBLY

ONE STRINGER OR

BACK TO BACK MOUNTING

Top View

STRAP DETAIL

Nylon

washer

washer

& post

Punch round and partial

post holes.

\*NOTE: On multi-leg installations, be sure that all anchors

are squared and lined up with each other.

through angle so that excess

and sian

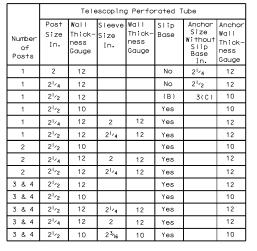
& lock washer

- 1. Horizontal stringers In lieu of perforated tubes, the contractor may substitute z bar stringers. The z bar stringers shall be  $1^{3}/_{4}'' \times {}^{3}/_{16}''$  thick. 1.08 lbs./ft . aluminum or 3.16 lbs./ft. steel. 2. Metal washer used on sign face shall have a minimum outside diameter of  $^{15}_{16}$  "  $\pm$   $^{1}_{16}$ " and 10 gauge thickness No Parking Signs: All no parking signs with directional arrows shall be placed at a 30 to 45 degree angle with the line of traffic flow. No parkin signs required at the above angles may have the support turned to the correct angle. If the no parkin sign is placed with another sign that has to be placed at a 90 degree angle with the line of traffic flow, the detailed angle strap should be used to mount the no parking sign. Material used for the attachment strap shall be included in the price bid flat sheet
- 4. 4" Vertical clearance of anchor or breakaway base. The  $4'' \times 60''$  measurement shall be made above and below post location and also back and ahead of post.

used with all nylon washers.

for signs. Flat washers and lock washers shall be

- Anchor material shall be 7 gauge H.R.P.O. Commercial quality ASTM A569 and 3"x 3"x 7 gauge ASTM A500 Grade B. Anchor shall have a yield strength of 43.9 KSI and tensile strength of 59.3 KSI. Anchor shall be hot dipped galvanized per ASTM A123/A153. All tolerances on anchor unit and slip base bottom assembly are  $\pm$ 0.005 unless otherwise noted.
- 6. When used in concrete sidewalk, anchor shall be the same except without the winas.
- 7. Four post signs shall have over 8' between the first and fourth posts.
- 8. In lieu of using the bent bolt to attach the post to stringer, the contractor may choose to punch the sign backing and place the bolt through the sign, the stringer and the post.



(B) - The  $2\frac{1}{2}$ , 12 gauge posts do not need breakaway bases when placed in standard soils, bu require a shim as specified by the manufacturer. The breakaway base is required when the support placed in weak soils. The Engineer shall determine if the soils are weak. Weak soils are classified as boggy, wet, or loose soil areas. (C) - 3'' anchor unit

Telescoping Perforated Tubes							
Tube Size In.	Wall Thickness In.	U.S. Standard Gauge	Weight Per Foot Lbs.	Moment of Inertia In.4	Cross Sect. area In:	Section Modulus In:3	-
11/2 × 11/2	0.105	12	1.702	0.129	0.380	0.172	ΙГ
2 × 2	0.105	12	2.416	0.372	0.590	0.372	Н
21/4 × 21/4	0.105	12	2.773	0.561	0.695	0.499	
$2^{3/16} \times 2^{3/16}$	0.135	10	3.432	0.605	0.841	0.590	
$2^{1/2} \times 2^{1/2}$	0.105	12	3.141	0.804	0.803	0.643	
$2^{1/2} \times 2^{1/2}$	0.135	10	4.006	0.979	1.010	0.785	
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The 2 3/16" size 10 gauge is shown as 2.19" size on the plans.

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		NORTH DAKOTA NT OF TRANSPORTATION						
	10-1-86							
	REVISIONS							
	DATE	CHANGE						
	04-12-99 06-25-99 10-04-99 02-10-00 11-21-02 02-23-03 12-01-04 12-13-05 04-24-06	Anchor unit Added note 7 Post pay length Remove shim detail Revise anchor unit and stringer mounting 3" anchor unit PE stamp added Revised table Reinforcing sleeve, Added note 8	•-					

This document was originally issued and sealed by MARK S GAYDOS, Registration Number PE-4518, on 04/24/06 and the original document is stored at the North Dakota Department of Transportation

Materials: 1/32" reprocessed Teflon